Claims

1. A process of preparing water soluble or water swellable polymer comprising the steps,

(a) forming an aqueous mixture comprising,

(i) a water soluble ethylenically unsaturated monomer or blend of monomers and,

(ii) an ultra violet initiator,

(b) effecting polymerisation by subjecting the aqueous mixture formed in step (a) to polymerisation conditions to form a polymer of said monomer or monomer blend, wherein ultra violet initiator is distributed throughout the polymer,

(c) subjecting the polymer formed in step (b) to ultra violet light radiation, characterised in that the polymerisation step (b) is conducted substantially in the absence of ultra violet radiation.

2. A process according to claim 1 in which the polymerisation step (b) is effected by suitable polymerisation initiators, selected from the group consisting of redox initiators and thermal initiators.

3. A process according to claim 1 or claim 2 in which the polymer in step (c) is subjected to ultraviolet light radiation at an intensity of up to 500 milliWatts.

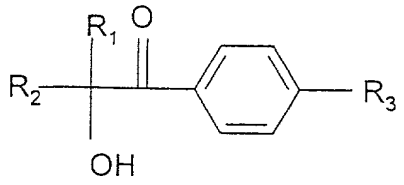
4. A process according to any of claims 1 to 3 in which the polymer is formed from acrylamide.

5. A process according to any of claims 1 to 4 in which the polymer has an intrinsic viscosity of at least 4 dl/g.

6. A process according to any of claims 1 to 5 in which the polymer formed by solution polymerisation.

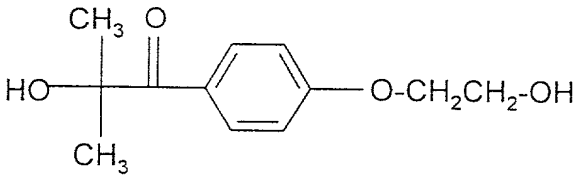
7. A process according to any of claims 1 to 6 in which the ultra violet initiator is soluble or dispersible in the aqueous monomer or monomer blend.

8. A process according to any of claims 1 to 7 in which the ultra violet initiator is a compound of formula:

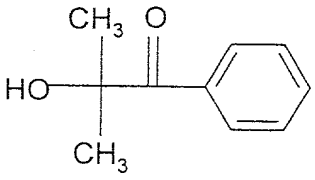


wherein R_1 and R_2 are each independently C_{1-3} alkyl or together form a C_{4-8} cycloaliphatic ring, R_3 is H, C_{1-2} alkyl or $-O(CH_2CH_2)_nOH$ and n is 1-20.

9. A process according to claim 8 in which the ultra violet initiator is a compound of formula:



10. A process according to claim 8 in which the ultra violet initiator is a compound of formula:

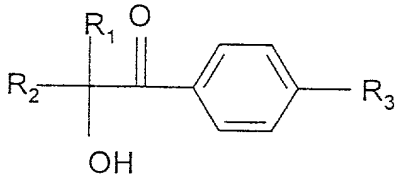


11. A process according to any of claims 1 to 10 in which step (c) is conducted simultaneous with a drying stage.

12. A method of reducing the residual monomer content in a water soluble or water swellable polymer by subjecting the polymer to ultra violet irradiation in the presence of an ultra violet initiator.

13. A method according to claim 12 in which the polymer is a polymer of acrylamide of intrinsic viscosity above 4 dl/g.

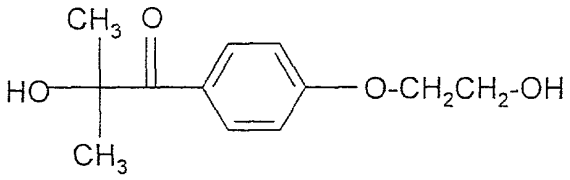
14. A method according to claim 12 or claim 13 in which the ultra violet initiator is a compound of formula:



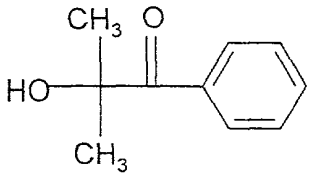
wherein R_1 and R_2 are each independently C_{1-3} alkyl or together form a C_{4-8}

cycloaliphatic ring, R_3 is H, C_{1-2} alkyl or $-O(CH_2CH_2)_nOH$ and n is 1-20.

15. A method according to claim 14 in which the ultra violet initiator is a compound of formula:



16. A method according to claim 15 in which the ultra violet initiator is a compound of formula:



17. A process of preparing water soluble or water swellable polymer comprising the steps,

(a) forming an aqueous mixture comprising,

(i) a water soluble ethylenically unsaturated monomer or blend of monomers and,

(ii) an ultra violet initiator,

(b) effecting polymerisation by subjecting the aqueous mixture formed in step (a) to polymerisation conditions to form a polymer of said monomer or monomer blend,

(c) subjecting the polymer formed in step (b) to ultra violet light radiation at an intensity of up to 500 milli Watts,

characterised in that the polymerisation step (b) is conducted substantially in the absence of ultra violet radiation.

18. A process according to claim 17 in which the ultra violet light radiation is at an intensity of up to 50 milli Watts.

19. A water soluble or water swellable polymer obtainable by a process defined by any of claims 1 to 11, 17 or 18 or by a method according to anyone of claims 12 to 16 in which the amount of residual monomer is below 100 ppm.